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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/687,238	10/13/2000	Ayman F. Naguib	Naguib 2000-0238	1168

7590  
Henry T. Brendzel  
P.O. Box 574  
Springfield, NJ 07081

09/12/2003

EXAMINER

CORRIELUS, JEAN B

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/687,238

Applicant(s)

NAGUIB ET AL.

Examiner

Jean B Corrielus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 11/9/00&10/13/00.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.                      6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 12. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

2. Claim 2, line 2, “.” needs to be inserted after equalization. Claim 3, line 7, “schema” needs to be replaced by “scheme”. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is narrative in form and do not contain positively recited **steps** of a specific process. Note that method claims should set forth **a series of steps** in the active tense in an instruction-like manner thereby reciting an actual method. The claim only recites a **single step**

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without any additional **steps delimiting** how its use is actually practiced. Dependent claims (if applicable) should further limit base claims by reciting additional method steps in a likewise fashion. Ex parte Erlich 3UPQ2d 1011 at 1017[6].

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation “where the were said selecting of” is unclear.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim, when taken as a whole, **only** performs **mathematical algorithm** without any limitation to **a practical application**. USPTO on Computer Related invention guidelines provides that for a claim including such subject matter be statutory, the

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claimed process **must be** limited to a **practical application** of the mathematical algorithm in the technological arts. Since the claim fail to satisfy such a requirement, therefore, it is determined to be non-compliant with 35 USC 101 requirements. The same comment applied equally to claim 2.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Struhsaker US patent No. 5,923,651 in view of Meehan US patent No. 6,115,419.

Struhsaker discloses a receiver comprising an equalizer 78 responsive to signals from antenna 54 a mapper responsive to said equalizer 78 a decoder 84 responsive to said mapper 82 said equalizer 78 is inherently responsive to transmission parameter values of said transmission channel and the encoding scheme within the transmitter so as to train its tap coefficients.

However, Struhsaker does not teach that the receiver is coupled to a plurality of antennas. In the same field of endeavor, Meehan teaches an equalizer 300 responsive to a plurality of antenna

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(220 and 240) it would have been obvious to one skill in the art to incorporate such a teaching in Struhsaker in order to improve signal detection.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Struhsaker US patent No. 5,923,651 in view of Meehan US patent No. 6,115,419 and further in view of Huang Us patent No. 5,475,716.

As applied to claim 3 above, Struhsaker further teaches an outer encoder 32 for applying the information signals a mapper 34 for mapping the result of the outer decoder. However, it fails to teach the used of a trellis coder for receiving the result of said mapping. However, the used of trellis encoder in the transmitter is old and well known the art. For instance, Huang teaches the used of a trellis encoder in the transmitter section. It would have been obvious to one skill in the art at the time of the invention to incorporate such a teaching in Struhsaker in order to enhance the coding efficiency of the apparatus. Huang teaches only trellis encoding prior to mapping and does not teach the reverse. Note that wether that trellis encoding prior to mapping or vice versa, the end result and system requirements will still be the same. Choosing one configuration over the other is only a matter of personal preference.

### ***Conclusion***

12. **Any response to this action should be mailed to:**

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9314

(for informal or draft communications, please label "PROPOSED" or  
"DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is (703) 305-4023. The examiner can normally be reached on Monday-Thursday from 7:00 A.M. to 5:30 P.M.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.

  
Jean B. Corrieus

Primary Examiner

TC-2600

9/4/03